

IN THE CLAIMS

Please amend claims 1, 3-4, 6-7, 9-13, 17-20 and 22-23 as indicated below.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended) A method of applying a conditioning effect to a material substrate thereby improving the absorbency of said substrate, said method including the step of performing a plasma modification and/or plasma deposition treatment on the substrate; said conditioning effect comprising exposing the substrate to ~~any, or any combination of~~, at least two treatment steps of: (i) cross-linking of the material of either or both the exterior and internal surfaces of the substrate; and ~~[[/or]]~~ (ii) plasma modification or plasma deposition of/onto the cross-linked material.

Claim 2 (original) A method according to claim 1 wherein steps (i) and (ii) are both performed and in sequence.

Claim 3 (currently amended) A method according to claim 1 wherein ~~[[the]]~~ a precursor gas is used in the generation of the plasma, said gas being ~~[[is]]~~ a noble, inert or nitrogenous gas.

Claim 4 (currently amended) A method according to ~~any preceding claims~~ claim 3 wherein the coating material is modified in the form of a hydrophilic layer in the first step with the plasma treatment in the second step acting to oxidise or nitrogenate the material.

Claim 5 (original) A method according to claim 4 wherein the precursor gas or liquid used in the plasma treatment step are oxygen or nitrogen containing chemical compounds.

Claim 6 (currently amended) A method according to ~~any of the preceding claims~~ claim 4 wherein an oxidation method is used in the form of ozonolysis.

Claim 7 (currently amended) A method according to claim ~~[[1]]~~ 3 wherein the precursor gas or liquid used for the plasma treatment in step ~~[[2]]~~ (ii) contains fluoride.

Claim 8 (original) A method according to claim 1 wherein the plasma used is a non-equilibrium plasma generated by a radio frequency, microwaves and/or direct current.

Claim 9 (currently amended) A method according to ~~any of the preceding claims~~ claim 8 wherein the plasma power applied during the first step is in the range of 0.01 watt to 500 watts.

Claim 10 (currently amended) A method according to ~~any of the preceding claims~~ claim 8 wherein the plasma power applied during the second step is in the range of 0.01 watt to 500 watts.

Claim 11 (currently amended) A method according to ~~any of the preceding claims~~ 9 and 10 wherein the plasma power applied during either or both of the first and second steps is pulsed.

Claim 12 (currently amended) A method according to ~~any of the preceding claims~~ claim 3 wherein the precursor gas or liquid introduced during either or both the first and second steps is pulsed.

Claim 13 (currently amended) A method according to ~~any of the preceding claims~~ claim 1 wherein the substrate is defined as any article capable of supporting a coating applied thereto.

Claim 14 (original) A method according to claim 13 wherein the substrate is a porous article with an exterior surface, a bulk matrix and pores extending from the exterior surface into the bulk matrix, said bulk matrix exterior and interstitial surfaces, at least in part, polymeric or oligomeric.

Claim 15 (original) A method according to claim 14 wherein the bulk matrix is a polyolefin.

Claim 16 (original) A method according to Claim 15 wherein the bulk matrix has a void volume ranging from 0.01% to 99%.

Claim 17 (currently amended) A method according to ~~any of the preceding claims~~ claim 13 wherein step (i) is controlled such that the effect of said step is controlled to be applied to a limited depth of the material below the external surface.

Claim 18 (currently amended) A method according to ~~any of the preceding claims~~ claim 13 wherein in step (ii) the effect of said step is controlled to be applied to a limited depth into the material below the external surface of the substrate.

Claim 19 (currently amended) A method according to ~~any of the preceding claims~~ claim 13 wherein the plasma used in either or both steps (i) and (ii) is selectively applied to localised areas across the substrate surface and/or below the substrate surface.

Claim 20 (currently amended) A method according to ~~any of the preceding claims~~ claim 13 wherein the material is an absorbent, hydrophobic polymer which is heated by step (i) to be cross linked by a noble gas plasma to improve its ability to retain liquid and render it superabsorbent.

Claim 21 (original) A method according to claim 20 wherein the material is modified by a subsequent nitrogenating plasma as step (ii) to render said cross linked polymer compatible with amine functionalities to form a super-absorbent polymer capable of retaining large quantities of amine containing aqueous solutions.

Claim 22 (currently amended) A method according to ~~any of the preceding claims~~ claim 1 wherein the substrate is a superabsorbent material.

Claim 23 (currently amended) A substrate having a modified surface, said surface modified by the method as set out in ~~any of claims 1-22~~ claim 1.